PUZZLERS

#41 | SAVE OUR DEAD ZONES

1 HOUR

Puzzle

Create a PSA to educate others in their school and community about dead zones.

Standards & Connections

NGSS.3-5-LS4-3, NGSS.MS-LS2-4, NGSS.MS-LS2-5, NGSS.HS-LS2-6

Background:

"A PSA (Public Service Announcement) is a short informational clip that is meant to raise the audience's awareness about an important issue. PSAs may include interviews, dramatizations, animations, and many other types of video and audio content."[i] "Dead zones are low-oxygen, or hypoxic, areas in the world's oceans and lakes. Because most organisms need oxygen to live, few organisms can survive in hypoxic conditions."[ii] This serious issue is happening in many places around the world, including where you live. This is happening in rural and urban areas because of our polluted runoff. Current agricultural practices, as well as the fertilizers we use at home, are all contributing to our dead zones and killing the animals that live in these waterways.

Suggested Materials:

Poster board, crayons, markers, colored pencils, video equipment, computers

IDENTIFY

Share the background information with the students, then share the puzzle to be solved. Determine constraints (e.g., time alotted, space, materials provided, etc.) and divide students into small groups.

IMAGINE

Ask a series of questions to help students brainstorm solutions to the puzzle. Encourage students to list all ideas – don't hold back! Before moving on, make sure each group selects a solution that fits within the contraints.

Ask: How can you can solve this puzzle? Which of your ideas can you build a prototype for given the constraints?

DESIGN

Students diagram the prototype, identify the materials needed to build the prototype, and write out the steps to take. Students describe the expected outcomes.

Ask: What steps will you take to create your solution? What do you expect your solution to look like and be able to do?

CREATE

Students follow their design plan and build their prototypes. Monitor their progress and remind them about how much time they have.

TEST & IMPROVE

Students evaluate their creation and compare it with the expected outcomes. Students seek areas of improvement and make changes where needed.

SHARE

Students share their solution to the puzzle and communicate lessons learned.

Ask: What was your biggest takeaway? What would you do differently?

Additional Resources:

For more background information on this topic, please visit www.purpleplow.org.

Research what your local community is already doing to help with this issue.

[i] https://www.theecologycenter.org/10-reasons-to-install-a-rain-barrel/

[ii] https://www.epa.gov/soakuptherain/soak-rain-rain-barrels